ABSTRACT

COMPUTED TOMOGRAPHY SCANNING

Artefacts in the reconstructed volume data of cone beam CT systems can be removed by the application of respiration correlation techniques to the acquired projection images. To achieve this, the phase of the patients breathing is monitored while acquiring projection images continuously. On completion of the acquisition, projection images that have comparable breathing phases can be selected from the complete set, and these are used to reconstruct the volume data using similar techniques to those of conventional CT. Any phase can be selected and therefore the effect of breathing can be studied. It is also possible to use a feature in the projection image(s) such as the patient's diaphragm to determine the breathing phase. This feature in the projection images can be used to control delivery of therapeutic radiation dependent on the patient's breathing cycle, to ensure that the tumour is in the correct position when the radiation is delivered.

(Fig 1)